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PROVINCE OF ONTARIO

NUCLEAR EMERGENCY PLAN

PART II - PICKERING

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Ontario

PROVINCE OF ONTARIO

NUCLEAR EMERGENCY PLAN

PART II - PICKERING



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Order in Council

On the recommendation of the undersigned, the Lieutenant Governor, by and with the advice and concurrence of the Executive Council, orders that

the appended document entitled "Province of Ontario Nuclear Emergency Plan Part II - Pickering Nuclear Emergency Plan" respecting emergencies arising in connection with the Pickering nuclear facility be adopted as Part II of the Province of Ontario Nuclear Emergency Plan, Order in Council numbered 1618/86 formulated under section 8 of the Emergency Plans Act, 1983, being chapter 30.

Recommended

A stylized, cursive signature of the Solicitor General, written in black ink over a horizontal line.

Solicitor General

Concurred

A cursive signature of the Chairman, written in black ink over a horizontal line.

Chairman

Approved

and Ordered

July 11, 1990

Date

A cursive signature of the Lieutenant Governor, written in black ink over a horizontal line.

Lieutenant Governor

FOREWORD

The Province of Ontario Nuclear Emergency Plan, Parts I through VIII, has been developed pursuant to Section 8 of the Emergency Plans Act, 1983. Numbered copies of the various parts of the Plan are distributed according to the Distribution List appended to the Part I Master Plan. Holders of these numbered copies are responsible for keeping them updated by incorporating numbered amendments, which will be issued from time to time.

Additional copies of the parts of the Nuclear Emergency Plan are available, for official use, from Emergency Planning Ontario, and for others, in Toronto, at:

Government of Ontario Bookstore
Main Floor, 880 Bay Street

(416) 965-2054

or, from outside Toronto, through:

Ministry of Government Services
Mail Order Service
5th Floor, 880 Bay Street
Toronto, Ontario
M7A 1N8

(416) 965-6015
Toll-free: 1-800-268-7540

This plan is administered by the Solicitor General of Ontario. All comments and suggestions relating to it should be directed to:

Ministry of the Solicitor General
Emergency Planning Ontario
5th Floor, 27 Carlton Street
Toronto, Ontario
M5B 1L2

(416) 965-6708

Copies of the plan have been made available to the relevant area public libraries for the information of the public. A copy of the plan is also available to the public for inspection and copying during ordinary business hours at the offices of Emergency Planning Ontario at the above address. Copies of Parts I, II and VI are available in French as well as English.

REMARQUE

Ce Plan, Partie II, est disponible en Français. Pour obtenir une exemplaire ou pour plus d'information, téléphonez (416) 965-6708.

PROVINCE OF ONTARIO
NUCLEAR EMERGENCY PLAN

PART II - PICKERING NUCLEAR EMERGENCY PLAN

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GLOSSARY

See Provincial Nuclear Emergency Plan, Part I, Appendix 14

DISTRIBUTION

As per Distribution List, Provincial Nuclear Emergency Plan,
Part I

ACRONYMS & ABBREVIATIONS

AECB	- Atomic Energy Control Board
AECL	- Atomic Energy of Canada Limited
BNGS	- Bruce Nuclear Generating Station
BNPD	- Bruce Nuclear Power Development
CANDU	- the name of the Canadian developed nuclear power reactor system (from <u>Canada Deuterium Uranium</u>)
CEPO	- Coordinator, Emergency Planning Ontario
COMSONT	- Communications Ontario (an amateur radio organization)
CRL	- Chalk River Nuclear Laboratories
DEL	- Derived Emission Limit
DNGS	- Darlington Nuclear Generating Station
DRL	- Derived Release Limit
ECC	- Exposure Control Centre
ECDU	- Exposure Control/Decontamination Unit
EOF	- Emergency Operations Facility
E.P.Ont.	- Emergency Planning Ontario
ExecGroup	- Executive-Advisory Group
FHQ	- Field Headquarters
FNECC	- Federal Nuclear Emergency Control Centre
InfoCentre	- Information Centre
InfoGroup	- Information Group
IMO	- Ingestion Monitoring Organization
IMCG	- Ingestion Monitoring Control Group
JTCC	- Joint Traffic Control Centre
KI	- Potassium Iodide
km	- Kilometer

ACRONYMS & ABBREVIATIONS (cont'd)

LOCA	- Loss-of-Coolant Accident
MCC	- Ministry of Culture and Communications
MCG	- Municipal Control Group
MCSS	- Ministry of Community & Social Services
MDU	- Monitoring & Decontamination Unit
Met	- Meteorology, meteorological
MNR	- Ministry of Natural Resources
MOE	- Ministry of the Environment
MOH	- Ministry of Health
MOL	- Ministry of Labour
MSG	- Ministry of the Solicitor General
MTO	- Ministry of Transportation, Ontario
OH	- Ontario Hydro
OMAF	- Ontario Ministry of Agriculture and Food
OpsCentre	- Operations Centre
OpsGroup	- Operations Group
PAD	- Public Action Directive
PAL	- Protective Action Level
PNGS	- Pickering Nuclear Generating Station
PTAC	- Phase 2 Advisory Committee
PZ	- Primary Zone
rad	- See definition of Absorbed Dose in Glossary, Part I
rem	- See definition of Dose Equivalent in Glossary, Part I
TechGroup	- Technical Group
Telecom	- Telecommunications
TLD	- Thermoluminescent Dosimeter

CHAPTER 1

GENERAL

1.1 Aim

The aim of Part II of the Provincial Nuclear Emergency Plan is to prescribe the measures that shall be undertaken to deal with a nuclear emergency caused by the Pickering Nuclear Generating Station (NGS).

1.2 Scope

- 1.2.1 This plan deals mainly with actions at the Provincial level and shall be supplemented by the appropriate Municipal plans (see 1.3 below). This plan shall also be read and applied in the context of Part I of the Nuclear Emergency Plan: The Provincial Master Plan.
- 1.2.2 This Part II Plan, together with the Part I Provincial Plan, are referred to as "the Provincial Plan" in this document.

1.3 Municipal Plans

- 1.3.1 The Regional Municipality of Durham and the Municipality of Metropolitan Toronto are the designated municipalities with respect to the Pickering Nuclear Generating Station (Provincial Plan, Part I, Appendix 2).
- 1.3.2 Municipal plans shall be made by the designated municipalities for a Pickering NGS nuclear emergency, as per the Provincial Plan, Part I, Section 1.5. These plans shall cover the offsite emergency response arrangements and activities of the designated municipalities, appropriate municipal departments, appropriate local boards and the local police forces. These plans are referred to as "the Municipal Plans" in this document.
- 1.3.3 In this document, the terms "municipal" and "municipalities" shall include, unless the context indicates otherwise, the designated municipalities (paragraph 1.3.1 above) as well as the local boards and local police forces whose area of operation includes the areas covered by the Municipal Plans.

1.4 Joint Traffic Control Plan

- 1.4.1 A Joint Traffic Control Plan for the area likely to be affected by a Pickering nuclear emergency shall be made by the police forces with jurisdiction over the area and its road network, with the assistance of the appropriate Ministry of Transportation districts.
- 1.4.2 This plan shall be designed to meet the requirements of the Provincial and Municipal Plans. For specific guidelines, see Provincial Plan, Part I, Chapter 6.
- 1.4.3 During an emergency this traffic control plan shall be implemented under the direction of the Provincial Operations Centre.

CHAPTER 2

PLAN DATA AND ORGANIZATION

2.1 Pickering Nuclear Generating Station

- 2.1.1 The Pickering Nuclear Generating Station (PNGS) is located at latitude 43°48' North and longitude 79°04' West, approximately 32 kilometers east of Toronto on the shore of Lake Ontario.
- 2.1.2 The Pickering nuclear facility contains two generating stations (PNGS-A and PNGS-B), each housing 4 CANDU nuclear reactors. Each of the reactor units has a power generation capacity of 540 MWe. Figure 1 (page 8) shows a schematic diagram of a CANDU reactor.

2.2 Planning Zones

2.2.1 Contiguous Zone

The Contiguous Zone comprises Response Sectors 1,2, and 3 (see Figure 2, page 9), and includes the subdivisions of Bay Ridges and Fairport Beach, and the Brock Road industrial area.

The Contiguous Zone is the area immediately surrounding the nuclear facility for which an increased level of emergency planning and preparedness may be advisable, as compared with the rest of the Primary Zone.

2.2.2 Primary Zone

The Primary Zone for Pickering NGS is shown in Figure 2 (page 9). It includes an area of the Region of Durham bounded generally by Lynde Creek to the east, 4th and 5th Concessions to the north, and the Durham-Metro boundary to the west, but excluding Pickering NGS. It also includes an area of Scarborough from the Durham-Metro boundary west to Morningside Avenue and extending to Finch and Steeles Avenues in the north. The zone extends out into Lake Ontario to a radius of 10 km from the Pickering Station. The exact boundaries of the zone can be determined from Appendix 1 (page 39).

The Primary Zone, which includes the Contiguous Zone, is the area within which it would be prudent to plan and prepare for taking Plume Exposure Control measures, such as sheltering and evacuation.

2.2.3 Secondary Zone

The Secondary Zone encompasses all areas of the Regional Municipalities of Durham, York, and Peel, Metropolitan Toronto, and Victoria County within a 50 km radius of Pickering NGS. The secondary zone is shown in Figure 3 (page 10), and includes both the Contiguous and Primary Zones. Figure 3 also shows the sub-zones and sub-sectors of the Secondary Zone. The municipalities involved are listed in section 5.3 (page 31).

The Secondary Zone is the area within which it would be prudent to plan and prepare for taking Ingestion Control measures, such as banning consumption of contaminated food items.

2.3 Response Sectors

2.3.1 The Primary Zone for Pickering NGS is divided into 26 Response Sectors which lie as follows:

- (a) Durham Region - Sectors 1-17
- (b) Metropolitan Toronto - Sectors 18-22
- (c) Lake Ontario - Sectors 23-26

2.3.2 The boundaries of the Response Sectors are shown in Figure 2 (page 9), and are detailed in Appendix 1 (page 39).

2.4 Planning Data

2.4.1 Population

Estimates are contained in Appendix 2 (page 41).

2.4.2 Institutions

Data on daycare centres, schools, hospitals, and senior citizen and nursing homes are contained in Appendix 2 (page 41).

2.4.3 Standard Lead Times For Protective Measures

These are given for each Response Sector in Appendix 3 (page 42).

2.4.4 Evacuation Data

Estimates of transportation requirements and the time required for evacuation of each Response Sector are contained in Appendix 4 (page 44).

2.5 Emergency Organization

- 2.5.1 The emergency management organization for dealing with a Pickering NGS emergency shall be as prescribed in the Provincial Plan, Part I, with the modification that Metro Toronto and Durham Region shall each establish their own Municipal Control Group.

Metro Toronto may set up a Metro Information Centre in addition to the Local Information Centre established in Durham Region. The Metro Information Centre shall carry out the functions listed in 7.3.3 (page 37).

- 2.5.2 The designated municipalities shall set up Municipal Control Groups as per Chapter 4 of the Provincial Plan, Part I. Appropriate municipal departments, local boards and local police forces shall provide representatives to the Municipal Control Groups. A Provincial representative shall be present in each of the Municipal Operations Centres to provide liaison, and to act as the main link between the Provincial Operations Centre and the Municipal Control Groups.

- 2.5.3 A Joint Traffic Control Centre shall be set up for a Pickering NGS emergency to implement the Joint Traffic Control Plan made under Section 1.4 (page 2). It shall be staffed by representatives of the Ontario Provincial Police, Metro Toronto Police Force, Durham Regional Police Force, York Regional Police Force and Districts No. 6 and 7 of the Ministry of Transportation.

2.5.4 The following regional/district/area offices of Provincial ministries shall be prepared to respond to the emergency and provide the necessary assistance to the designated municipalities, as required by the Provincial Plan (for details, see Appendix 8 of Part I), the Municipal Plans, or as directed by their respective ministries:

(a) Agriculture & Food

Central Region
Durham East District Office
Peterborough District Office

(b) Community & Social Services

Central Region
Toronto Area Office
Peterborough Area Office

(c) Environment

Central Region
Toronto Area Office
Scarborough District Office

(d) Health

Central Eastern Region
Oshawa/Markham District Ambulance Service
Oshawa Central Ambulance Communications Centre

(e) Natural Resources

Lindsay District

(f) Solicitor General (Ontario Provincial Police)

District No. 5

(g) Transportation

District No. 6
District No. 7

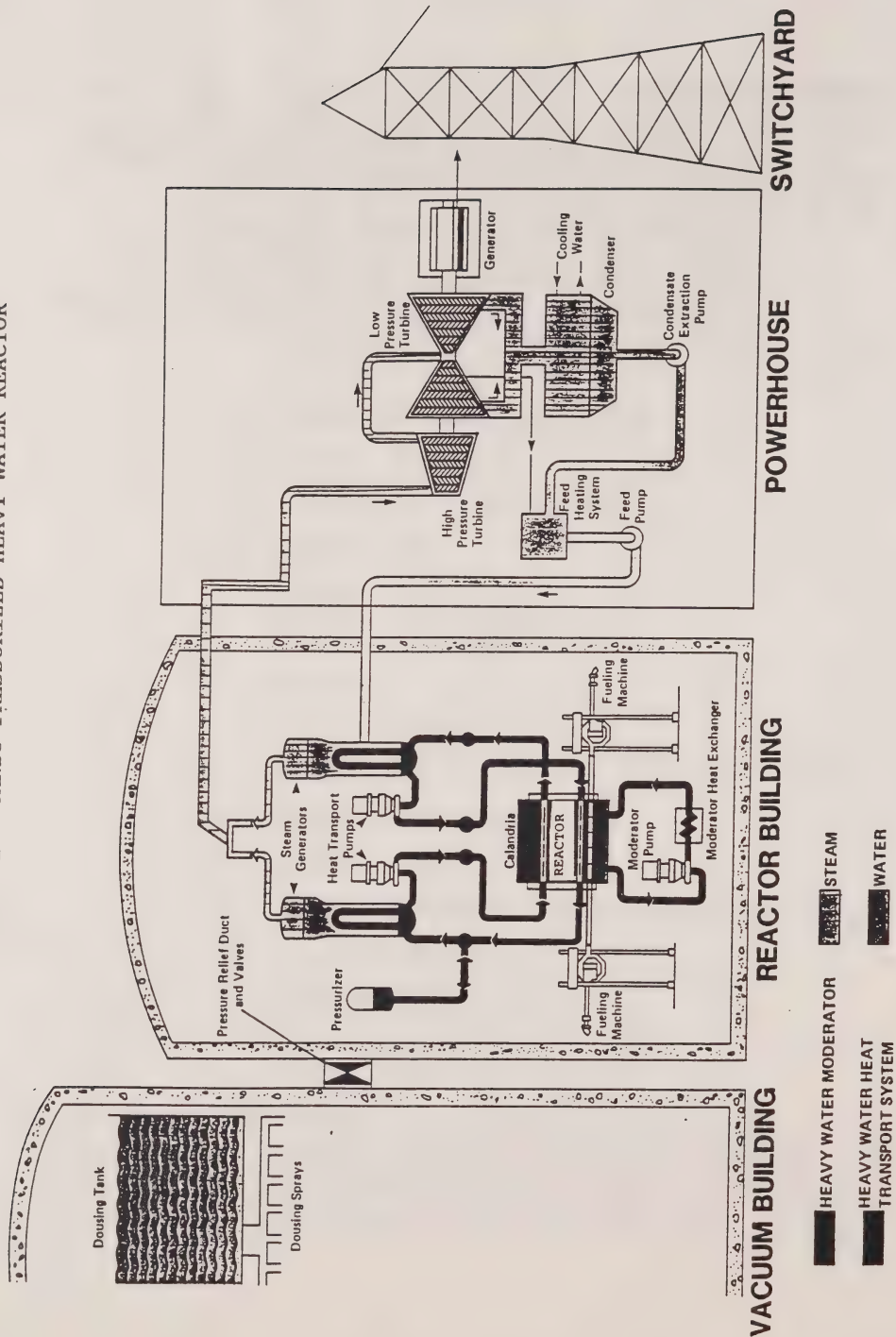
2.6 Emergency Facilities

The various emergency centres and facilities required to be established under this plan will be located as shown in Appendix 5 (page 48). These locations have been selected by the municipalities and organizations concerned.

2.7 Telecommunications

- 2.7.1 The telecommunication links to be established, or which are available for use, in a Pickering NGS emergency are shown in Appendix 6 (page 51).
- 2.7.2 All organizations and agencies involved in responding to a Pickering NGS nuclear emergency shall ensure that those of their essential telephones which need to make outgoing calls during an emergency are covered by the Line Load Control program.

FIGURE 1 - CANDU PRESSURIZED HEAVY WATER REACTOR



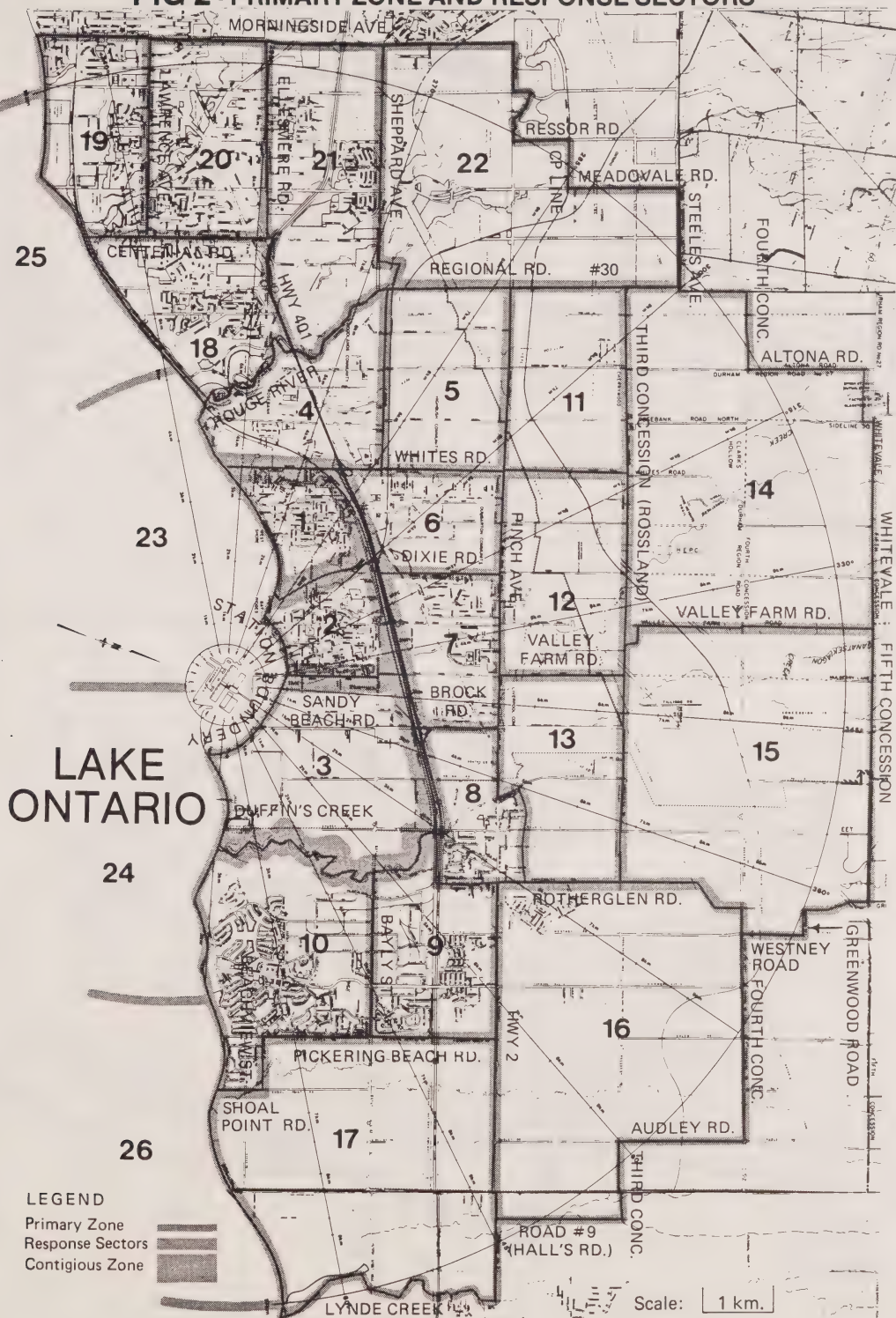
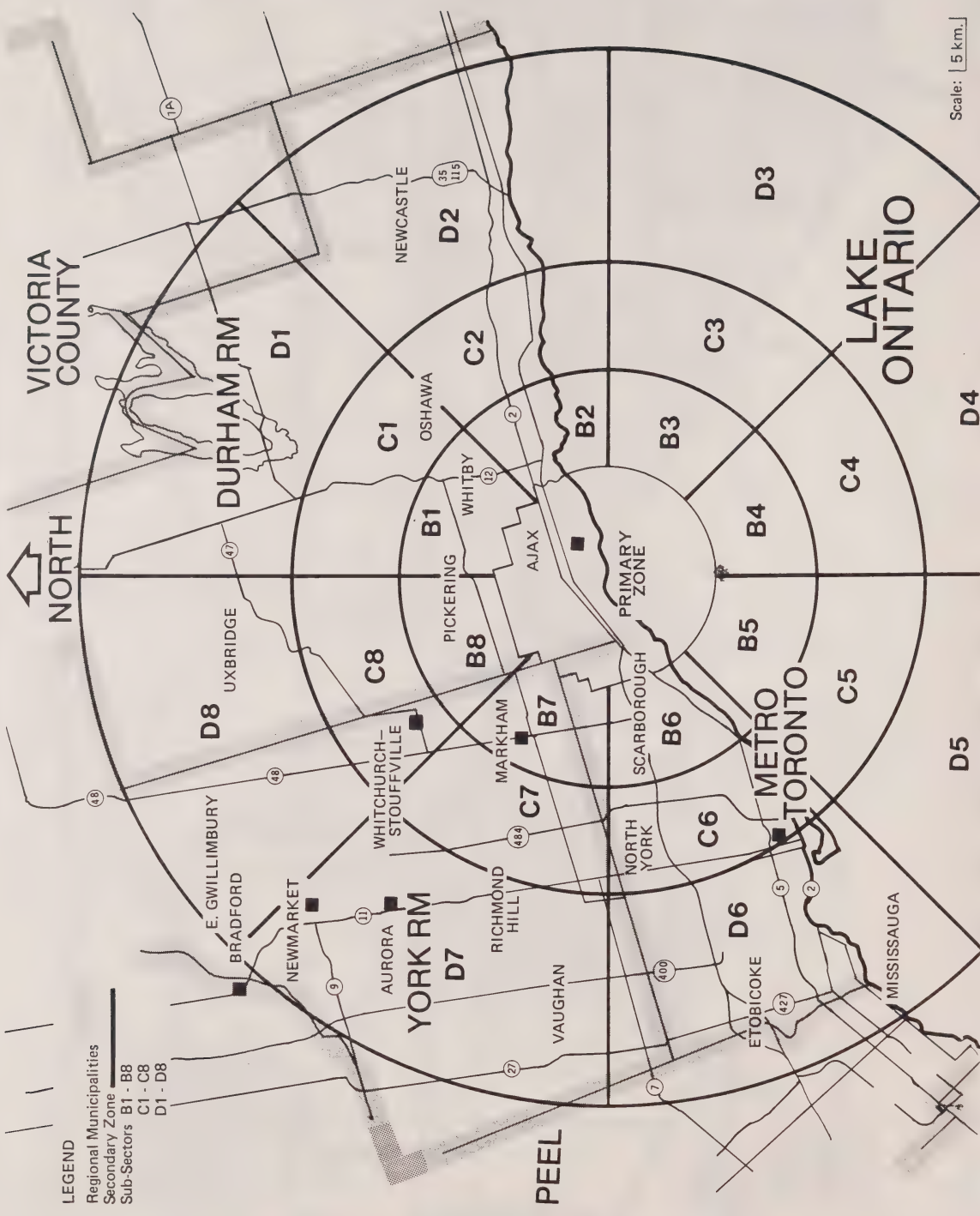


FIG 3 - SECONDARY ZONE AND SUB-SECTORS



CHAPTER 3

NOTIFICATION

3.1 General

- 3.1.1 This chapter covers the notification system used in the standard case, i.e., a Pickering NGS atmospheric emission, by itself or concurrent with a liquid emission. In such cases it is expected that operations would be conducted so that Phase 1 would precede Phase 2.
- 3.1.2 However, in certain cases (namely, for a purely liquid emission from Pickering NGS, and for certain transborder accidents) Phase 1 operations would not be required, and the Provincial Plan will be activated for Phase 2 operations only. The notification system described below would **not apply** in full in such cases. The differences are dealt with in Chapter 6 below (for a purely liquid emission) and in Part VIII of the Provincial Nuclear Emergency Plan (for transborder emergencies).

3.2 Initial Notification

- 3.2.1 The Pickering NGS Duty Shift Supervisor shall notify the pre-designated contact points in the Provincial and Municipal emergency organizations as soon as conditions arise at the station which require such notification under the criteria contained in Chapter 5 of the Provincial Plan, Part I.
- 3.2.2 The Shift Supervisor shall assign an appropriate category to the notification as prescribed in the Provincial Plan, Part I. If at any time after the initial notification the Shift Supervisor concludes that the category has changed, he shall immediately make a notification to this effect to all concerned.
- 3.2.3 A Category 1 notification shall be made only to the Province, and not to the municipalities. In this case, the Coordinator, Emergency Planning Ontario, shall monitor the situation and keep the municipalities informed of developments, as appropriate.

- 3.2.4 The Provincial contact point is prescribed in Annex B to Appendix 7 (page 58). The municipal contact points shall be designated in the Municipal Plans.
- 3.2.5 The Province may review and, if considered appropriate after consultation with the nuclear facility, revise the notification category assigned by the Shift Supervisor. This revised category shall then be communicated to the municipalities and other agencies, and shall supersede the current one.

3.3 Internal Notification and Activation

3.3.1 Provincial

- (a) When Pickering NGS initiates an emergency notification, the Coordinator, Emergency Planning Ontario (or, where necessary, alternates) shall decide whether to monitor the situation, place the Provincial emergency organization on stand-by, or activate it (as per section 6.1 of the Provincial Plan, Part I). In the latter two cases, the internal fan-out notification shall be initiated. The notification message shall include the notification category.
- (b) If the plan is placed on standby, the Coordinator shall continue to monitor the situation, obtain technical advice, and shall activate the plan when considered appropriate or when a new notification requiring this is received from the plant.
- (c) The Provincial fan-out notification procedure and lists are contained in Appendix 7 (page 55). They provide for initiation of the Provincial fan-out, and notification of the Provincial Operations Centre staff and certain external agencies.
- (d) The members of the Phase 2 Advisory Committee shall be notified by the Provincial Operations Centre at an appropriate time towards the end of Phase 1.

- (e) The notification procedure for the members of the Provincial Information Centre and the Local Information Centre shall be prescribed in their operating procedures.
- (f) The notification procedure for the members of the Ingestion Monitoring Organization (IMO) shall be prescribed in the IMO procedures.
- (g) The following ministries and agencies shall issue their own internal notification and activation procedures and lists, which should include their appropriate regional and area/district offices (2.5.4 above):

Ministry of Agriculture & Food
Ministry of Community & Social Services
Ministry of Culture and Communications
Ministry of the Environment
Ministry of Health
Ministry of Natural Resources
Ministry of Transportation
Ontario Provincial Police

- (i) All of the above-mentioned notification procedures shall provide for immediate activation of their respective organizations (less the IMO) upon receipt of a Category 3 emergency notification, or upon activation of the Provincial Nuclear Emergency Plan.
- (j) The notification lists mentioned in (c) through (g) above shall be updated and, if necessary, re-issued every six months, or more often if appropriate.

3.3.2 Municipal

- (a) The Municipal Plans shall prescribe the internal municipal notification and activation procedure. Municipal departments/agencies shall set up their own internal notification and activation procedures. These procedures shall ensure that all elements of the municipal response organization can be expeditiously notified when required. They shall also provide for immediate activation of all plans upon receipt of a Category 3 notification, or upon activation of the

Provincial Nuclear Emergency Plan (Note: This does not apply in the case of a liquid emission [paragraph 6.5.1, page 35], nor in the case of an activation of the Provincial Plan for Phase 2 operations only).

- (b) The Municipal Plan shall provide for the placing of the Municipal emergency organization on standby or its activation depending on the notification message received, as per Table 4.1 (page 25).

3.3.3 Others

Other organizations which are affected and need to notify their members at the onset of a nuclear emergency, shall set up their own internal notification procedures, and shall implement them according to the content of the emergency notification received by them. These procedures shall provide for immediate activation of emergency plans in case of a Category 3 notification, or when the Provincial Nuclear Emergency Plan is activated (Note: This does not apply in the case of a liquid emission nor in the case of an activation of the Provincial Plan for Phase 2 operations only).

3.4 External Notification

- 3.4.1 The Federal Government, the Province of Quebec, the Canadian Coast Guard, the States of New York, Michigan and Ohio, and the U.S. Coast Guard shall be notified as prescribed in Annex E to Appendix 7 (page 61).
- 3.4.2 Certain other agencies/organizations which need to be notified early, shall be so notified by the following, who shall set up in advance the necessary procedures for doing so:
 - (a) Ministry of Agriculture & Food shall notify:
The Ontario Milk Marketing Board
 - (b) Ministry of Community & Social Services shall notify:
Red Cross, Ontario Division
St. John Ambulance, Ontario Council

- (c) Ministry of Culture and Communications shall notify:

Bell Canada
CNCP Telecom

- (d) Ministry of Natural Resources shall notify:

Petticoat Creek Conservation Area
Greenwood Conservation Area

- (e) Ministry of the Solicitor General shall notify:

Designated Media

- (f) Ministry of Transportation shall notify:

National Transportation Agency -
Emergency Alert
CN Rail
CP Rail
GO Transit
Air Traffic Control

- (g) The Municipal Plans shall provide for the notification of:

Durham Region Board of Education
Durham Region Separate School Board
Metro-Toronto Board of Education
Metro-Toronto Separate School Board
Local utilities (Hydro, gas, water)
Local branches of volunteer organizations

3.5 Public Notification

- 3.5.1 Notification to the public of the occurrence or imminence of a nuclear emergency shall be carried out as follows:

- (a) The public in the Primary Zone shall be alerted by means of sound signals which would indicate to them the need to tune to pre-designated radio/TV stations listed in the public education brochure distributed throughout the Primary Zone.

- (b) Under instructions from Emergency Planning Ontario the OPP News Bureau shall transmit a message to media stations linked to them to broadcast an announcement asking the public in the Primary Zone to tune to the pre-designated radio/TV stations.
- (c) An appropriate announcement will be issued by Emergency Planning Ontario to the Designated Media, and will be broadcast by them.

3.5.2 The public alerting referred to in (a) above shall be carried out under municipal arrangements, and these shall be specified in the Municipal Plans. This alerting shall be initiated as soon as Municipal Plans are activated, and shall be completed as soon as possible. In case resources are initially insufficient to alert the complete Primary Zone simultaneously, this alerting should be conducted in the following order of priority:

- (a) Sectors 1, 2 and 3.
- (b) Sectors 4, 5, 6, 7, 8, 9 and 10.
- (c) Sectors 11, 12, 13, 16 and 17.
- (d) Sectors 14, 15, 18, 19, 20, 21 and 22.

3.5.3 Emergency Planning Ontario shall make appropriate arrangements with the Canadian Coast Guard to notify marine craft in sectors 23, 24, 25 and 26, and others which may pass close to the nuclear facility.

CHAPTER 4

OPERATIONS - PHASE 1

4.1 Introduction

4.1.1 Scope

This chapter deals with the emergency response in case of a radioactive emission to the atmosphere, or such an emission combined with a liquid emission. Emergency response in case of a purely liquid emission is dealt with in Chapter 6.

4.1.2 Overview

Operations during Phase 1 are expected to proceed according to the following sequence:

- (a) Notifications (Chapter 3).
- (b) Appropriate response to the notifications, including, where necessary, activation of plans and the automatic implementation of certain immediate actions (sections 4.2 to 4.5 below).
- (c) If appropriate, the implementation of protective measures by the municipalities (section 4.6 below).
- (d) The Province will declare a Provincial Emergency and will assume control of operations (sections 4.7 and 4.8 below).
- (e) Upon assuming control, the Province will assess the need for certain initial measures, and will institute those considered necessary (section 4.9 below).
- (f) The Province will carry out an ongoing assessment of the situation and will order appropriate protective and operational measures (sections 4.9 and 4.10 below).
- (g) At an appropriate time the Province will order the commencement of ingestion monitoring (section 4.11 below).

- (h) When the radiation emissions from the nuclear facility have ended, and there is no risk of further uncontrolled emissions, the Province will rescind, as appropriate, the protective measures imposed, and allow or arrange for the return of evacuees, where safe. A smooth transition will be made from Phase 1 to Phase 2 (section 4.12 below).

4.2 Category 1 Notification - Response

A Category 1 notification does not require activation of any emergency plans, and is made only to the Province. The Province will monitor the situation, and keep the municipalities apprised as and when appropriate. In the event that the notification category is upgraded, either by the Shift Supervisor or by the Province, a new notification shall be made to the municipalities and all others concerned, and action shall be taken as appropriate to that category (see below).

4.3 Category 2 Notification - Response

The normal response to a Category 2 notification shall be the placing of emergency organizations on stand-by by the Province, municipalities and other agencies and the setting up of Provincial and Municipal Operations and Information Centres and Ministry operations rooms. The situation will be continuously monitored by the Province. If conditions at the nuclear facility revert to normal, and no further action is required, the Province will issue a stand-down advisory to all concerned. If, on the other hand, further action is necessary, the Province will activate the Provincial Plan and may, in addition, upgrade the notification category to 3, if appropriate. In either case, all other emergency plans shall be immediately activated, and the appropriate actions implemented (see Table 4.1, page 25).

4.4 Category 3 Notification - Response

Whenever the nuclear facility or the Province makes a Category 3 notification, all emergency plans and organizations shall be immediately activated. Any measures, prescribed in plans as requiring automatic implementation on a Category 3 activation, shall be implemented (see Table 4.1, page 25).

4.5 Immediate Actions

- 4.5.1 Depending on whether plans are being placed on standby or activated, and the notification category, certain immediate actions shall be taken at the Provincial and Municipal levels. These are tabulated in Table 4.1 (page 25).
- 4.5.2 The Municipal Plans and the plans of all affected ministries, agencies and other organizations shall provide for these immediate actions to be carried out automatically upon receipt of the relevant notification message.

4.6 Protective Measures by Municipalities

4.6.1 Protective Measures - Immediate

If a radioactive emission is imminent or ongoing at the time of making the initial notification (3.2.1 above), the Pickering NGS Shift Supervisor shall include in the message a recommendation for sheltering in Response Sectors 1, 2 and 3. If, based upon the station situation and prognosis, in his judgement certain additional protective measures are required to be implemented immediately in any sectors of the Primary Zone, or the area for sheltering should include other sectors, the Shift Supervisor shall so recommend in his initial notification message.

The Municipal Plans shall prescribe how such a recommendation is to be dealt with before the MCGs are functional, and the official(s) and alternate(s) who shall act upon the recommendation.

4.6.2 Preparatory Measures

If the Province has not yet assumed operational control, the Municipal Control Groups, upon assembly following activation of the Municipal Plans, shall consider, in consultation with the Coordinator, Emergency Planning Ontario, the following preparatory measures:

- (a) Closing of beaches and recreation areas in the whole Primary Zone.
- (b) Suspension of work in the whole Primary Zone or in certain sectors only.

- (c) Restriction of non-critical patient admissions in hospitals within the Primary Zone.

The Coordinator shall co-ordinate the wishes of the two Municipal Control Groups, and issue the necessary public announcements regarding any mutually agreed measures (paragraph 7.5.2, page 38).

4.6.3 Protective Measures - Later

After the initial notification and before the Province assumes operational control the Station Manager or Shift Supervisor, Pickering NGS, shall recommend to the MCGs imposition of any protective measure listed in Table 4.2 (page 29) should that become necessary under the technical criteria prescribed in the Provincial Plan. The Head MCGs shall decide on appropriate action on such recommendations, factoring in operational considerations such as weather, readiness of the emergency organization, etc.

4.7 Declaration of a Provincial Emergency

- 4.7.1 The Coordinator, Emergency Planning Ontario, shall arrange for the declaration of a Provincial emergency, as provided for in Appendix 5, Provincial Plan, Part I. This should preferably occur prior to the assumption of operational control by the Province.
- 4.7.2 Normally, the area to be covered initially by a Provincial declaration for a Pickering NGS emergency shall be the Regional Municipality of Durham and Metropolitan Toronto. This can be enlarged later on if so required.

4.8 Provincial Assumption of Control

- 4.8.1 The Province may assume control of operations at any time but will normally do so through the Provincial Operations Centre and when the following requirements are met:
 - (a) The Provincial Operations Centre and the Provincial Information Centre are ready to function.
 - (b) The necessary telecommunication links are functional.

- 4.8.2 Notification of Provincial assumption of control shall be formally made by the Provincial Operations Centre (or the Coordinator, Emergency Planning Ontario) to all concerned, specifying the time at which this control will become effective.
- 4.8.3 From the time at which Provincial control goes into effect, the following shall apply:
- (a) Pickering NGS shall cease to make recommendations or provide information to the Municipal Control Groups (MCGs). Formal communications shall cease between the nuclear facility and the Ontario Hydro liaison officers at the MCGs, and between the nuclear facility and the Local Information Centres.
 - (b) Directives on protective action shall be issued to the Municipal Control Groups from the Provincial Operations Centre, or before it is operational, the Coordinator, Emergency Planning Ontario. The MCGs should complete any protective action being implemented at the time of takeover, but thereafter no other protective, preparatory, or precautionary measure relating to the nuclear emergency shall be undertaken by the MCGs without the direction or concurrence of the Provincial Operations Centre (or the Coordinator, Emergency Planning Ontario).

4.9 Protective Measures by the Province

4.9.1 Preparatory Measures

The Provincial Operations Centre shall, immediately after assuming operational control, consider the desirability of imposing any or all of the preparatory measures listed in 4.6.2 above, if not already imposed. In addition, the advisability of going to Stage 2 of the Traffic Control Plan shall be considered.

The Provincial Operations Centre shall also consider the desirability of imposing, as a precaution, any of the protective measures listed in Table 4.2, page 29, including the following:

- (a) In case of a serious accident, and particularly in the event of a Category 3 notification, an early precautionary evacuation of sectors 1, 2 and 3 should be considered.

- (b) As a general rule the Ingestion Control measures should be imposed in the Primary Zone prior to any emission of radioactivity. An assessment shall be made of the need to extend these measures to areas beyond the Primary Zone.
- (c) If it is certain that no radiation risk would be incurred by drivers, the Provincial Operations Centre shall direct the Ministry of Agriculture & Food to arrange for clearance of all dairy farms' milk storages in the Primary Zone.

4.9.2 Protective Measures

Based on a continuous assessment of future projections of how the situation may develop (Chapter 6, Provincial Plan, Part I refers), the Provincial Operations Centre shall decide on and order appropriate protective measures (Table 4.2, page 29) during the course of Phase 1. These measures shall be implemented by the municipalities and other appropriate agencies.

- 4.9.3 Measures affecting lake sectors shall be communicated to the Canadian Coast Guard for implementation.

4.10 Evacuations

- 4.10.1 Evacuations, if considered necessary, shall be carried out by Response Sector, according to the outline evacuation plan given in Appendix 4 (page 44).
- 4.10.2 It is expected that most residents will be able to evacuate under their own arrangements. Vehicles shall be provided, under municipal arrangements, to move those evacuees who are unable to furnish their own transportation.
- 4.10.3 Ambulances and special vehicles shall be made available, under municipal arrangements, to those residents requiring special transportation.
- 4.10.4 The Municipal Plans shall include the arrangements by which residents may obtain such alternate means of transportation.

- 4.10.5 The smooth and expeditious movement of evacuee traffic shall be the responsibility of the traffic control organization set up under the Joint Traffic Control Plan.
- 4.10.6 Medical support to any evacuation shall be provided by the local ambulance services and hospitals under municipal arrangements.
- 4.10.7 The reception and care of evacuees shall be provided for in the municipal plans, which should include letters of agreement executed with host municipalities.
- 4.10.8 Pickering NGS shall prepare its own plans for the evacuation of onsite personnel in consultation with the Province. However, any evacuation of onsite personnel shall be carried out by the station after giving prior notice of its intention to the Provincial Operations Centre, and at timings agreed to with the latter.

4.11 Ingestion Monitoring

At an appropriate stage, the field elements of the Ingestion Monitoring Organization shall be activated by the Provincial Operations Centre. When the situation is considered to have stabilized, the Executive Director, Provincial Operations Centre, shall direct the Ingestion Monitoring Control Group to commence field monitoring for Ingestion Control purposes.

4.12 Transition to Phase 2

The Executive Director, Provincial Operations Centre, shall carry out the relevant provisions of Chapter 6, Provincial Plan, Part I, at the appropriate stage. This will result in the rescinding of the protective measures ordered, including the return of most, if not all, evacuees. The Phase 2 Advisory Committee shall be convened.

4.13 Emergency Worker Safety

- 4.13.1 At the commencement of an emergency, the Response Sectors in the Primary Zone shall be assumed to carry the following safety status (Provincial Plan, Part I, Chapter 6, refers):

Category 1 or 2 notification

- All sectors : GREEN

Category 3 notification

- Sectors 1,2,3,23 & 24 : ORANGE
- Sectors 4 to 10 : YELLOW
- All others : GREEN

- 4.13.2 If appropriate, Pickering NGS may recommend changes to the above sector safety status to the Municipal Control Groups prior to Provincial assumption of control.
- 4.13.3 When the Province assumes operational control, the Provincial Operations Centre shall, as early as is feasible, assign a safety status to each Response Sector and inform all concerned. These allocations shall be periodically updated.
- 4.13.4 The Provincial Operations Centre, the Municipal Control Groups and all other affected organizations shall ensure that emergency workers are informed of the current sector safety status.
- 4.13.5 Emergency workers, including Canadian Coast Guard personnel, entering sectors assigned a safety status other than GREEN shall first report to an Exposure Control Centre, and shall observe the precautionary measures prescribed by the Centre and in the Provincial Plan, Part I, Appendix 4. The municipalities and other affected organizations shall ensure that any such workers can be provided with direct reading dosimeters, KI pills and TLD badges before the Exposure Control Centres become functional.

TABLE 4.1 - IMMEDIATE ACTIONS IN RESPONSE TO NOTIFICATION

<u>Notification Category & Action</u>	<u>Immediate Actions</u>	<u>Provincial</u>	<u>Municipal</u>
"Category 1"	CEPO shall monitor the situation and keep municipalities apprised.	No action required unless notification category is upgraded and/or further instructions given by Province.	
"Category 2" (excluding a LIQUID EMISSION)	<ol style="list-style-type: none"> (1) CEPO shall initiate notification placing the Provincial emergency organization on standby. (2) Provincial OpsCentre shall be set up (but not staffed). (3) Provincial InfoCentre shall be set up (but not staffed). (4) Operations rooms for Ministry Emergency Action Groups shall be set up (but not staffed). (5) Joint Traffic Control Centre shall be set up (but not staffed). (6) Emergency Planning Ontario shall inform the Designated Media. 	<ol style="list-style-type: none"> (1) Municipal contact points shall initiate notification placing municipal organizations on standby. (2) Municipal OpsCentres shall be set up (but not staffed). (3) Local InfoCentres shall be set up (but not staffed). 	<div></div> <div>1</div> <div>2</div> <div>5</div> <div>1</div>

TABLE 4.1 - IMMEDIATE ACTIONS IN RESPONSE TO NOTIFICATION (cont'd)

Notification Category & Action	Immediate Actions	Provincial	Municipal
<i>"Provincial Nuclear Emergency Plan is to be activated" (following a Category 2 notification)</i>	<ol style="list-style-type: none"> (1) CEPO initiates appropriate notification, including that to the media (3.4.2(g) and 3.5.1(b) above). (2) Provincial OpsCentre shall be set up and staffed. (3) Provincial InfoCentre shall be set up and staffed. (4) Ministry Emergency Action groups shall assemble in their operations rooms. (5) The field elements of the Ingestion Monitoring Organization shall be placed on standby. (6) The Joint Traffic Control Centre shall be set up and staffed. (7) The Traffic Control Plan shall be activated and Stage 1 shall be automatically implemented. 	<ol style="list-style-type: none"> (1) Heads, Municipal Control Groups, shall initiate notification activating municipal plans. (2) Heads, Municipal Control Groups, shall initiate notification of the public (3.5 above). (3) Municipal OpsCentres and Local InfoCentres shall be set up and staffed. (4) Reception Centres, Exposure Control Centres and at least one Evacuee Centre for each Reception Centre shall be set up and staffed. (5) Emergency organizations of appropriate municipal departments shall be activated. (6) A municipal emergency shall be declared. 	

TABLE 4.1 - IMMEDIATE ACTIONS IN RESPONSE TO NOTIFICATION (cont'd)

Notification
Category & Action

Immediate Actions

Provincial

Municipal

"Category 3"
(excluding a
LIQUID EMISSION)

- (1) CEPO shall initiate notification activating the Provincial plan, and notify the media (3.4.2(g) and 3.5.1(b) above).
- (2) All the actions listed at (2) to (7) above shall be carried out.
- (3) Canadian Coast Guard shall broadcast a warning for marine craft to remain clear of sectors 23 through 26.
- (4) MTO shall notify Air Traffic Control to direct aircraft to avoid flying over the Primary Zone.
- (5) MTO shall advise CN Rail to remove and keep all rail traffic out of Sectors 1, 2 and 3 of the Primary Zone. CN Rail shall notify the Provincial Operations Centre, through MTO, if any train was passing through these sectors at, or shortly before, the time of notification, and seek instructions regarding it.

- (1) Municipal contact point shall initiate notification activating the municipal plan.
- (2) Heads, Municipal Control Groups, shall initiate notification of the public (3.5 above).
- (3) Municipal OpsCentres and Local InfoCentres shall be set up and staffed.
- (4) Reception Centres, Exposure Control Centres and at least one Evacuee Centre for each Reception Centre shall be set up and staffed.
- (5) Emergency organizations of appropriate municipal departments shall be activated.
- (6) A municipal emergency shall be declared.

(cont'd)

TABLE 4.1 - IMMEDIATE ACTIONS IN RESPONSE TO NOTIFICATION (cont'd)

<u>Notification Category & Action</u>	<u>Immediate Actions</u>	
	<u>Provincial</u>	<u>Municipal</u>
<u>"Category 3" (cont'd.)</u>	(6) The Joint Traffic Control Centre shall implement Stage 2 of the Traffic Control Plan.	
	(7) Ministry of Natural Resources shall close Petticoat Creek Conservation Area and Greenwood Conservation Area.	

TABLE 4.2 - PHASE 1 PROTECTIVE MEASURES

A. Exposure Control Measures

1. Entry Control (the specific measures possible are listed on page 27 as items (3) through (5) under "Provincial" actions).
2. Sheltering.
3. Evacuation.
4. Ingestion of Potassium Iodide (KI) Pills.

B. Ingestion Control Measures

1. Banning consumption of any item which may have been exposed outdoors.
2. Banning consumption of locally produced milk.
3. Banning the export outside the Primary Zone of any milk, meat, produce and milk- or meat-producing animals.

C. Water Control

One or more of the following water supply plants in or near the Primary Zone may be required to shut off their intakes if there is any risk of their intake supply being contaminated:

Pickering Water Filtration Plant

Ajax Water Filtration Plant

Whitby Water Filtration Plant

Scarborough Easterly Filtration Plant

CHAPTER 5

OPERATIONS - PHASE 2

5.1 General

- 5.1.1 Phase 2 operations will normally follow Phase 1 operations. However, in certain cases the Provincial Plan may be activated for Phase 2 operations only (namely, in the case of a purely liquid emission and for most transborder accidents). The general conduct of Phase 2 operations will be the same in all circumstances, though details will vary depending on whether Phase 2 operations follow Phase 1, or whether the problem is a liquid emission or a transborder accident.
- 5.1.2 This chapter covers Phase 2 operations following Phase 1. Phase 2 operations in the case of a liquid emission are covered in Chapter 6 below. Phase 2 operations for a transborder emergency are dealt with in the Provincial Plan, Part VIII.

5.2 Overview

- 5.2.1 During Phase 2 the main activity will be:
 - (a) Ingestion Control operations (monitoring of the food chain and water supplies for possible radioactive contamination, and taking appropriate measures if any is found. These measures are listed in the Provincial Plan, Part I, Chapter 2).
 - (b) Restoration operations (measures to restore conditions to normal, including assessment and payment of compensation for losses, if any).
- 5.2.2 The Provincial organization for Phase 2 operations is shown in Figure 8 of the Provincial Plan, Part I.
- 5.2.3 The normal municipal organization should be able to handle Phase 2 operations within the municipality. If considered desirable, the Municipal Control Groups may continue into Phase 2.

5.3 Area of Operations

Phase 2 operations may extend to the outer limits of the Secondary Zone (see Figure 3, page 10), but are likely to be confined only to those areas of the zone subjected to the plume during Phase 1. Some of the following municipalities may be involved in Phase 2 operations:

- (a) Durham Region
- (b) Metropolitan Toronto
- (c) York Region
- (d) Peel Region
Cities of Mississauga and Brampton
- (e) Victoria County
Townships of Manvers and Mariposa

5.4 Field Monitoring

During Phase 2, field monitoring shall be carried out as follows:

- (a) The field elements of the Ingestion Monitoring Organization shall carry out ingestion monitoring in the Secondary Zone.
- (b) Ingestion monitoring throughout the province shall be carried out by implementation of the plan for General Province-wide Monitoring (Provincial Plan, Part I, Chapter 5 refers).
- (c) Monitoring teams provided by Ontario Hydro shall carry out field monitoring for restoration purposes.

These monitoring operations may be supplemented by the use of other monitoring resources that may become available.

5.5 Ingestion Control Operations

Based upon the results of field monitoring, the Phase 2 Advisory Committee (Provincial Plan, Part I, Chapter 4 refers) shall advise the Executive Authority on the Ingestion Control measures that may be necessary. Appropriate instructions shall be issued by the Provincial Operations Centre to ministries, municipalities and other organizations, who shall implement them.

5.6 Restoration Operations

Under direction of the Executive Authority, advised by the Phase 2 Advisory Committee, an overall restoration plan shall be developed and communicated to all concerned. This will include, among other things, the return of evacuees not permitted to go back to their homes before the end of Phase 1, the housing of those evacuees who cannot be allowed back for some time, assessment and compensation arrangements, etc.

5.7 Municipal Restoration Operations

Under the overall plan developed by the Province, each municipality affected by the emergency shall formulate a restoration plan, and take all necessary measures to restore conditions to normal within its area.

5.8 Emergency Worker Safety

5.8.1 Based upon the results of field monitoring and dose projections, the Head, Technical Group shall periodically allocate safety status to sub-sectors or areas of the Secondary Zone, according to the guidelines prescribed in the Provincial Plan, Part I, Appendix 4. These will be communicated by the Provincial Operations Centre to all organizations involved in Phase 2 operations.

5.8.2 Emergency workers shall observe the precautions prescribed in the Provincial Plan, Part I, Appendix 4 according to the safety status assigned. If necessary, the Exposure Control Centres already established shall continue to function into Phase 2, and new ones may be set up to cover other areas.

5.9 Termination of Emergency

5.9.1 When the Phase 2 Advisory Committee has completed its tasks, it will be disbanded by the Executive Authority.

5.9.2 When considered appropriate, the Provincial emergency will be terminated.

CHAPTER 6

OPERATIONS - LIQUID EMISSION

6.1 General

In case of a purely liquid emission (i.e., a release of radioactive liquid from Pickering NGS into Lake Ontario), the general response would be in the form of Phase 2 operations, as described in Chapter 5. The initial response to such an emergency would differ from that detailed in Chapter 4, and is dealt with below.

6.2 Notifications and Response

6.1.1 Initial Notification

The initial notification from Pickering NGS shall be made under the criteria prescribed in the Provincial Plan, Part I, Chapter 5, and in the same manner as for an airborne emission (see 3.2 above). The keywords "LIQUID EMISSION" shall be included in the notification message.

6.1.2 Category 1 and 2 Notification - Response

If the notification of a liquid emission has attached to it a Category 1 or 2, the situation will be monitored and assessed, and, if and when appropriate, the Coordinator, Emergency Planning Ontario, shall place the Phase 2 organization on stand-by or activate the Provincial Nuclear Emergency Plan for Phase 2 operations (section 6.3 below).

6.1.3 Category 3 Notification - Response

In case a Category 3 notification of a liquid emission is made by Pickering NGS, the Coordinator, Emergency Planning Ontario, shall immediately activate the Provincial Nuclear Emergency Plan for Phase 2 operations (section 6.3 below).

6.3 Activation for Phase 2 Operations

When the Provincial Nuclear Emergency Plan is to be activated for Phase 2 operations only, a notification to this effect shall be made to all concerned, including the following:

- (a) The Provincial Phase 2 organization (5.2.2 above)
- (b) Ministry of the Environment
- (c) Municipalities likely to be affected
- (d) The Federal Government
- (e) Canadian Coast Guard
- (f) The State of New York
- (g) U.S. Coast Guard (through Canadian Coast Guard)

6.4 Response - Provincial: Phase 2

The notification message to the different elements of the Provincial Phase 2 organization shall specify whether they are to remain on stand-by or be activated. In the latter case the following actions shall be taken:

- (a) The Ingestion Monitoring Control Group (IMCG) and the Technical Group shall assemble at the Provincial Operations Centre, and commence planning for ingestion monitoring. They shall receive direction from the Coordinator, Emergency Planning Ontario, and technical guidance from the Head, Technical Group.
- (b) The Ingestion Monitoring Organization field elements shall assemble at their assigned rendezvous, and commence monitoring as and when directed by the IMCG.
- (c) The Phase 2 Advisory Committee shall meet at the Provincial Operations Centre at a time to be designated by the Coordinator, Emergency Planning Ontario.
- (d) An Operations Group component (consisting of the Head/Deputy Head, the two Operations Staff Officers and the Administrative Officer) shall assume responsibility for running the Operations Centre, including its telecommunications. Additional support staff shall be

called in, as required. The Operations Group may be activated later (see 6.6.4 below).

- (e) If notified, the Information Group shall report to the Provincial Operations Centre, and the Provincial Information Centre staff shall set up that centre (see section 6.7 below).
- (f) The Solicitor General of Ontario shall assume the functions of the Executive Authority.

6.5 Response - Municipal

- 6.5.1 In the case of a liquid emission notification, the municipal plan shall not be activated, unless specifically so ordered by the Coordinator, Emergency Planning Ontario. This applies even in the case of a Category 3 notification of a liquid emission, or the activation of the Provincial Plan for Phase 2 operations.
- 6.5.2 The municipalities may be directed by the Province to convene their Municipal Control Groups, if that is considered appropriate.
- 6.5.3 The municipalities shall implement any measures ordered by the Province to deal with the situation.

6.6 Operations

6.6.1 Immediate Actions

In case of a Category 3 activation, or whenever deemed appropriate under a Category 2 activation, the Coordinator, Emergency Planning Ontario, shall immediately consider the following measures, and taking into account technical advice, implement those considered appropriate:

- (a) Entry control into lake sectors.
- (b) Closing beaches in the affected area.
- (c) Banning swimming, fishing, and the consumption of fish caught in Sectors 23 through 26.

- (d) Closing intakes and commencing testing for radioactivity at any or all of the following water supply plants, under arrangements of the Ministry of the Environment:

Pickering Water Filtration Plant
Ajax Water Filtration Plant
Whitby Water Filtration Plant
Scarborough Easterly Filtration Plant

6.6.2 Provincial Emergency

The Coordinator, Emergency Planning Ontario, shall examine the need for declaration of a Provincial emergency, and shall arrange for such a declaration if considered appropriate.

6.6.3 Phase 2 Operations

These shall be carried out as outlined in Chapter 5 above.

6.6.4 Implementation

The Operations Group of the Provincial Operations Centre, or part of it, may be activated to plan, organize and ensure implementation of the measures to be imposed.

6.7 Emergency Information

When activating the Provincial Plan, the Coordinator, Emergency Planning Ontario, shall consult with the Director of Emergency Information and decide upon the most appropriate organizational structure to handle the emergency information operation. If considered desirable, the Information Group of the Provincial Operations Centre and the Provincial Information Centre may be activated.

CHAPTER 7

EMERGENCY INFORMATION AND PUBLIC DIRECTION

7.1 Scope

This chapter deals mainly with the provision of information and direction to the public in the Primary Zone. The provision of information to the general media and the general public is covered in the Provincial Plan, Part I.

7.2 Designated Media

Prior arrangements shall be made by the Coordinator, Emergency Planning Ontario with the media organizations (the Designated Media) which are to be used for communicating directions and information to the Primary Zone population.

The Designated Media for this plan are listed in Appendix 8 (page 62).

7.3 Local and Metro Information Centres

7.3.1 The Local Information Centre is a joint facility of the Province, Durham Region, and Ontario Hydro. The Metro Information Centre shall be staffed by Metro Toronto. Prior to the Province assuming operational control, these Centres shall function under the general direction of the Heads, Municipal Control Groups. Once the Province takes over control, policy and general direction shall be prescribed by the Director of Information at the Provincial Operations Centre.

7.3.2 The organization of the Local Information Centre is given in the Provincial Plan, Part I, Chapter 4.

7.3.3 The Centres shall perform the following functions:

- (a) Issue news releases to the local media and provide briefings to the media representatives present at the centre on the provincial, municipal and utility response to the emergency.
- (b) Keep the MCGs and the Provincial Operations Centre informed on media and public perceptions and reactions, and recommend any remedial action necessary.

(c) Provide information to the Provincial Information Centre on local developments and measures.

(d) Assist journalists working in the area.

7.4 Provincial Assumption of Control

As soon as the Province assumes control of operations, the Provincial Operations Centre shall assume control of the emergency information operation while the Provincial Information Centre shall become the primary agency for the issue of general emergency information. The Local and Metro Information Centres shall continue their main function of providing local information.

7.5 Public Action Directives (PADs)

- 7.5.1 These directives are instructions to the public to take some appropriate preparatory or protective measure. They are broadcast by the Designated Media when so required under a pre-arranged system, which is detailed in the PAD Manual. These prior arrangements include pre-scripted and possibly pre-recorded messages.
- 7.5.2 If any measure is to be implemented before the Provincial Operations Centre is functioning, the Coordinator, Emergency Planning Ontario shall issue the necessary instructions direct to the Designated Media to broadcast the appropriate PAD.
- 7.5.3 Once the Provincial Operations Centre is operational, it shall arrange to have the appropriate Public Action Directives broadcast by the Designated Media.
- 7.5.4 The broadcast of the Public Action Directives shall be monitored to ensure that they are being correctly transmitted to the public.

RESPONSE SECTOR BOUNDARIES

(also see Figure 2, page 9)

SECTOR	MUNICIPALITY	SECTOR BOUNDARY (north; east; south; west)
1	Durham	South boundary of Highway #401; Diagonally across Frenchman's Bay; Shore line; White's Road.
2	Durham	South boundary of Highway #401; Sandy Beach Road; Station Boundary/Shore line; Diagonally across Frenchman's Bay.
3	Durham	South boundary of Highway #401; Duffin's Creek; Shore line/Station Boundary; Sandy Beach Road.
4	Durham	Sheppard Avenue; White's Road; Shore line; Rouge River.
5	Durham	Finch Avenue; White's Road; Sheppard Avenue; Regional Road #30.
6	Durham	Finch Avenue; Dixie Road; Highway #401; White's Road.
7	Durham	Finch Avenue; Brock Road; Highway #401; Dixie Road.
8	Durham	Finch Avenue and Highway #2 including Pickering Village; Rotherglen Road; Highway #401; Brock Road.
9	Durham	Highway #401, and Highway #2; Pickering Beach Road; Bayly Street; Duffins Creek, Rotherglen Road.
10	Durham	Bayly Street; Pickering Beach Road; Beachview Street; Shoal Point Road; Shore line; Duffin's Creek.
11	Durham	Third Concession; White's Road; Finch Avenue; Regional Road 30.
12	Durham	Third Concession; Valley Farm Road; Finch Avenue; White's Road.
13	Durham	Third Concession; Rotherglen Road; Finch Avenue; Valley Farm Road.

RESPONSE SECTOR BOUNDARIES (cont'd)

(also see Figure 2, page 9)

SECTOR	MUNICIPALITY	SECTOR BOUNDARY (north; east; south; west)
14	Durham	Fourth Concession, Fifth Concession; Valley Farm Road; Third Concession; Regional Road #30, Altona Road.
15	Durham	Fifth Concession; Rotherglen Road, Westney Road, Third Concession, Valley Farm Road.
16	Durham	Fourth Concession, Third Concession; Audley Road, Hall's Road; Highway #2; Rotherglen Road.
17	Durham	Highway #2; Lynde Creek; Shore line, Beachview Street; Shoal Pt. Road, Pickering Beach Road.
18	Metro	Highway #401; Rouge River; Shore line; Centennial Road.
19	Metro	Lawrence Avenue; Centennial Road; Shore line; Morningside Avenue.
20	Metro	Ellesmere Road; Centennial Road; Lawrence Avenue; Morningside Avenue.
21	Metro	Sheppard Avenue, Twin Rivers Drive; Rouge River; Highway #401, Ellesmere Road; Morningside Avenue.
22	Metro	Finch Ave., CP Line, Steeles Avenue; Regional Road #30; Twin Rivers Drive, Sheppard Avenue; Morningside Avenue, Ressor Road, Meadowvale Road.
23	Lake	Shore line; 160° line from PNGS; 5 km arc from PNGS.
24	Lake	Shore line; 5 km arc from PNGS; 160° line from PNGS.
25	Lake	Shore line; 5 km arc from PNGS; 160° line from PNGS; 10 km arc.
26	Lake	Shore line; 10 km arc; 160° line; 5 km arc.

PLANNING DATA

SECTOR	POPULATION	DAYCARE & NURSERY SCHOOLS*	SCHOOLS	HOSPITAL	SR. CIT. & NURSING HOMES
			# Enrolment		
1	6058	4	3 1391		
2	7123	5	3 1735		
3	212	0	1 11		
4	5250	4	8 3620		1
5	3980	1	2 963		
6	8153	4	2 1079		
7	10667	4	3 1740		
8	3200	2	1 1491		
9	10148	2	5 2753		1
10	18843	5	9 6556	1	
11	210	0	0 0		
12	3715	0	2 1085		
13	3582	1	2 1026		
14	524	0	0 0		
15	569	0	1 34		
16	6054	2	3 1325		
17	1720	0	0 0		
18	12900	1	6 3472		1
19	10000	1	5 1780		
20	8100	1	3 1173		2
21	16500	4	5** 5738		
22	2600		1 101		
Total - Durham: 90,008		34	45 24,809	1	2
Total - Metro: 50,100		7	20 12,264	0	3
Total - Primary Zone: 140,108		41	65 37,073	1	5

* Private daycare is not accounted for in this data.

** University counted in this Number. Enrolment - 4341.

STANDARD LEAD TIMES¹ FOR PROTECTIVE MEASURES

SECTOR	SHELTERING ²	EVACUATION ³	
		Normal Conditions	Reduced Visibility Conditions
	Hrs. Min.	Hrs. Min.	Hrs. Min.
1	2 00	5 00	7 00
2	2 00	5 00	7 00
3	2 00	5 00	7 00
4	2 00	3 40	4 50
5	2 00	3 40	4 50
6	2 00	3 40	4 50
7	2 00	3 20	4 20
8	2 00	4 00	5 20
9	2 00	5 30	7 30
10	2 00	5 30	7 30
11	2 00	3 10	4 00
12	2 00	3 20	4 20
13	2 00	4 00	5 20
14	2 00	2 30	3 00
15	2 00	2 30	3 00
16	2 00	2 30	3 00
17	2 00	2 30	3 00
18	2 00	3 40	4 50
19	2 00	3 50	5 10
20	2 00	3 50	5 10
21	2 00	3 50	5 10
22	2 00	3 50	5 10

Notes to Appendix 3

1. Standard lead times represent the total time required, under standard conditions (see note 4 below), to complete a protective measure by all those instructed to do so.
2. Sheltering lead time =
 - Time required to make and transmit decision (1 hour)
 - + Time required to alert the public and convey the instructions (1/2 hour)
 - + Time required by the public to prepare (1/2 hour)
3. Evacuation lead time =
 - Time required to make and transmit decision (1 hour)
 - + Time required to alert the public and convey the instructions (1/2 hour)
 - + Time required for groups of sectors evacuating at the same time to leave the Primary Zone
4. Standard conditions are assumed to be:
 - fair weather
 - a fully mobilized emergency organization
 - no traffic obstructions
 - initial public notification (Section 3.5, page 15) completed.

EVACUATION TIMES AND OUTLINE PLAN

SECTOR	TRANSPORTATION	RECEPTION CENTRE	MAIN EVACUATION ROUTE	EVACUATION TIMES	
				NORMAL CONDITIONS	REDUCED VISIBILITY
	Cars	Buses*		Hrs. Min.	Hrs. Min.
1	2391	(22) 14	York U. Hwy #401 (W)/Keele St. (N)	1 50	2 30
2	2813	(27) 16	York U. Hwy #401 (W)/Keele St. (N)	3 00	4 20
3	4750**	(1) 1	Civic Aud. Hwy #401 (E)/Stevenson Rd.(N)/Champlain Ave. (W)	2 20	3 20
4	2100	(57) 12	York U. Hwy #401 (W)/Keele St. (N)	1 20	1 50
5	1571	(15) 9	York U. Hwy #401 (W)/Keele St. (N)	1 30	2 00
6	3205	(17) 18	York U. Hwy #401 (W)/Keele St. (N)	1 30	2 00
7	4198	(27) 24	Durham C. Hwy #2 (E)/Thickson Rd. (N)/Colin Rd. (E)	2 00	2 50
8	1274	(23) 7	Durham C. Hwy #2 (E)/Thickson Rd. (N)/Colin Rd. (E)	1 20	1 50
9	4011	(43) 23	Civic Aud. Hwy #401(E)/Stevenson Rd.(N)/Champlain Ave. (W)	3 00	4 20
10	7470	(102) 42	Civic Aud. Hwy #401(E)/Stevenson Rd.(N)/Champlain Ave. (W)	3 50	5 30

* Buses indicated by () represent buses that will evacuate students from school. These buses will not be needed when schools are closed. The other buses represent the number of people requiring bus transport from the sectors.

** includes vehicles of workforce in sector 3

EVACUATION TIMES AND OUTLINE PLAN (CONT'D)

SECTOR	TRANSPORTATION		RECEPTION CENTRE	MAIN EVACUATION ROUTE	EVACUATION TIMES		
					NORMAL CONDITIONS	REDUCED VISIBILITY	
	Cars	Buses*			Hrs. Min.	Hrs. Min.	
11	83	(0) 1	Durham C.	Altona Rd. (N)/Whitevale Rd. (E)/ Brock Rd. (N)/Hwy #7 (E)	1 20	1 40	
12	1470	(17) 8	Durham C.	Brock Rd. (N)/Hwy #7 (E)	1 30	2 00	
13	1417	(16) 8	Durham C.	Church St. (N)/Concession Rd. (E)/ Westney Rd. (N)	1 40	2 10	
14	206	(0) 2	Durham C.	4th Concession (E)/Brock Rd. (N)/ Hwy #7 (E)	1 00	1 20	
15	224	(1) 2	Durham C.	Westney Rd. (N)/Hwy #7 (E)	1 20	1 40	
16	2389	(21) 14	Durham C.	Harwood Ave. (N)/ 4th Concession (E)/Brock Rd. (N)/ Hwy #7 (E)	1 30	1 50	
17	673	(0) 4	Civic Aud.	Hwy #401 (E)/Stevenson Rd. (N)/ Champlain Ave. (W)	1 10	1 20	

* Buses indicated by () represent buses that will evacuate students from school. These buses will not be needed when schools are closed. The other buses represent the number of people requiring bus transport from the sectors.

EVACUATION TIMES AND OUTLINE PLAN (CONT'D)

SECTOR	TRANSPORTATION		RECEPTION CENTRE	MAIN		EVACUATION TIMES	
				EVACUATION ROUTE		NORMAL CONDITIONS	REDUCED VISIBILITY
	Cars	Buses*			Hrs. Min.	Hrs. Min.	
18	5099	(54) 29	CNE	Lawrence Ave. (W)/Don Valley Parkway (S) Lawson Rd. (W)/Kingston Rd. (W)	2 40	3 40	
19	3939	(28) 23	CNE	Coronation Dr. (W)/Kingston Rd. (W) Lawrence Ave. (W)/Don Valley Parkway (S)	2 40	3 40	
20	3185	(18) 18	CNE	Lawson Rd. (W)/Kingston Rd. (W) Lawrence Ave. (W)/Don Valley Parkway (S) Ellesmere Rd. (W)/Don Valley Parkway (S)	1 30	2 10	
21	6542	(90) 37	CNE	Sheppard Ave. (W)/Don Valley Parkway (S) Ellesmere Rd. (W)/Don Valley Parkway (S)	2 10	3 00	
22	1019	(2) 6	CNE	Meadowvale Rd. (S)/Sheppard Ave. (W)/ Don Valley Parkway (S) Beare Rd. (N)/Steeles Ave. (W)/ Don Valley Parkway (S)	1 00	1 20	

* Buses indicated by () represent buses that will evacuate students from school. These buses will not be needed when schools are closed. The other buses represent the number of people requiring bus transport from the sectors.

Notes to Appendix 4

1. Evacuation time is the period from the time the evacuation order is given by the Municipal Control Group, to the time the last vehicle clears the Primary Zone boundary, and equals:

Time required by the public to prepare (1/2 hour)

+ Time for the last vehicle to clear the Primary Zone

2. Evacuation times are estimated under normal conditions and conditions of reduced visibility. Normal conditions assume:

- (i) fair weather
- (ii) a fully mobilized emergency organization
- (iii) no traffic obstruction

Reduced visibility assumes an additional time factor added to the time it takes for the last vehicle to clear the Primary Zone under normal conditions to allow for adverse weather conditions such as heavy rain, snow or fog.

3. Evacuation times are rounded off to the nearest ten minutes.
4. For Reception Centres, see Appendix 5 (page 48).

APPENDIX 5
(Ref: Section 2.6)

EMERGENCY FACILITIES - LOCATIONS

1. Provincial Operations Centre : OPP General Headquarters
90 Harbour Street
Toronto
2. Provincial Information Centre: 700 University Avenue
Toronto
3. Emergency Action Group OMAF : 6th Floor
801 Bay Street
Toronto
4. Emergency Action Group MCSS : 6th Floor
Hepburn Block
80 Grosvenor St.
Toronto
5. Emergency Action Group MTO : Communications Centre
East Building
1201 Wilson Avenue
Downsview
6. Radiation Laboratory : MOL Radiation Protection
Laboratory
81 Resources Road
Weston
7. Field Headquarters IMO
 - Site A : Whitby Municipal Building
575 Rossland Road East
Whitby
 - Site B : 25 Division
Durham Regional Police
No. 2 Highway
Pickering
 - Site C : Metro Works
Easterly Filtration Plant
Copperfield Road
Scarborough

8. Municipal Operations Centre : 18 Division HQ
- Durham Durham Regional Police
650 Rossland Road East
Whitby
9. Municipal Operations Centre : Metro Police HQ
- Metro 590 Jarvis Street
Toronto
10. Disaster Field Headquarters : 4 District HQ
- Metro 1001 Birchmount Road
Scarborough
11. Joint Traffic Control Centre: MTO Yard
Highway 401/Kennedy Road
Scarborough
12. Local Information Centre : Durham Regional Building
605 Rossland Road East
Whitby
13. Metro Information Centre : Metro Police HQ
40 College Street
Toronto
14. Combined Reception/
Evacuee Centres - Metro
RCEC#M1 : Exhibition Place (CNE),
Lakeshore Blvd W./
Strachan Avenue, Toronto
RCEC#M2 : York University Campus
4700 Keele Street
Downsview
15. Combined Reception/
Evacuee Centre - Durham
RCEC#D1 : Durham College
2000 Simcoe St. North
Oshawa
16. Reception Centres - Durham
RC#D1 : Civic Auditorium Complex
Thornton Road South
Oshawa

17. Evacuee Centres - Durham

EC#D1 : Paul Dwyer High School
700 Stevenson Road North
Oshawa

EC#D2 : McLaughlin High School
630 Stevenson Road North
Oshawa

EC#D3 : Donovan Collegiate
250 Harmony Road South
Oshawa

EC#D4 : Eastdale Collegiate
265 Harmony Road North
Oshawa

EC#D5 : G.L. Roberts Collegiate
399 Chaleur Avenue
Oshawa

18. Exposure Control Centre
- Durham

ECC#D1 : Anderson St. High School
Anderson Street
Whitby

19. Exposure Control Centres
- Metro

ECC#M1 : Centennial College, Progress
Court (Markham Rd./ Highway
401)
Scarborough

ECC#M2 : Marine Unit Headquarters,
Queen's Quay
Toronto

APPENDIX 6
(Ref: Section 2.7)

TELECOMMUNICATIONS

1. All emergency centres and facilities are linked through the normal Bell telephone system.
2. Additional telecommunication links available are shown as follows:
 - Annex A - Special Telephone Channels
 - Annex B - Ontario Government and Ontario Hydro Private Telephone Networks
 - Annex C - Radio Links

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graph TD
    SO[Ontario Hydro Emergency Operations Centre]
    PO[Provincial Operations Centre]
    PG[Premier of Ontario]
    SG[Solicitor General of Ontario]
    RC[RCMP Toronto]
    OH[Ontario Hydro Head Office]
    P[Pickering NGS]
    MCM[Municipal Control Group Metro]
    MIC[Metro Information Centre]
    MCD[Municipal Control Group Durham]
    LIC[Local Information Centre]

    PG --- PO
    SG --- PO
    RC --- PO
    PO --- SO
    SO --- OH
    SO --- P
    SO --- H
    H --- MCM
    H --- MIC
    H --- MCD
    H --- LIC
  
```

ONTARIO HYDRO EMERGENCY OPERATIONS CENTRE

2

2

4

4

ONTARIO HYDRO HEAD OFFICE

PICKERING NGS

PROVINCIAL INFORMATION CENTRE

PREMIER OF ONTARIO

SOLICITOR GENERAL OF ONTARIO

RCMP TORONTO

PROVINCIAL OPERATIONS CENTRE

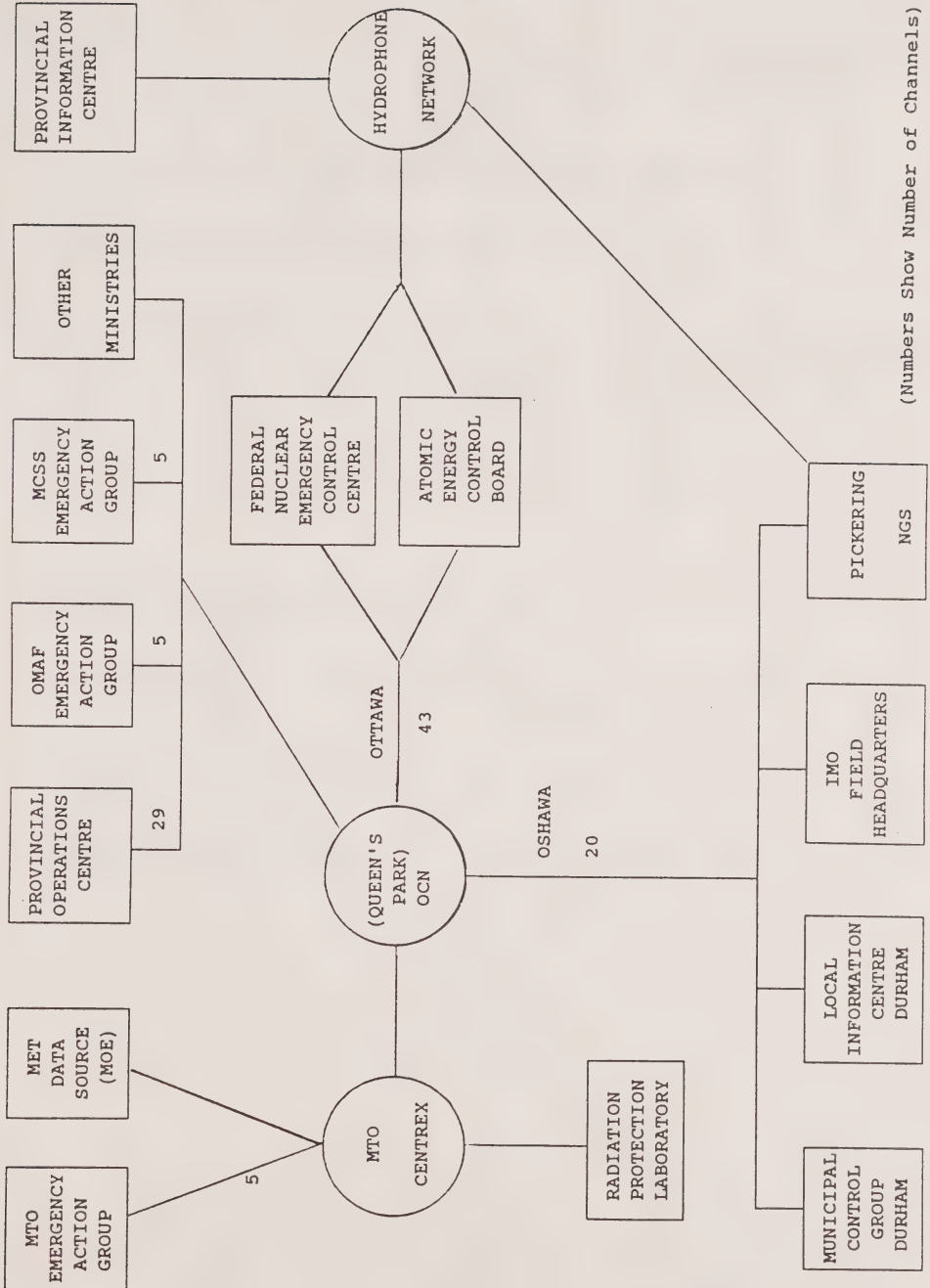
MUNICIPAL CONTROL GROUP METRO

METRO INFORMATION CENTRE

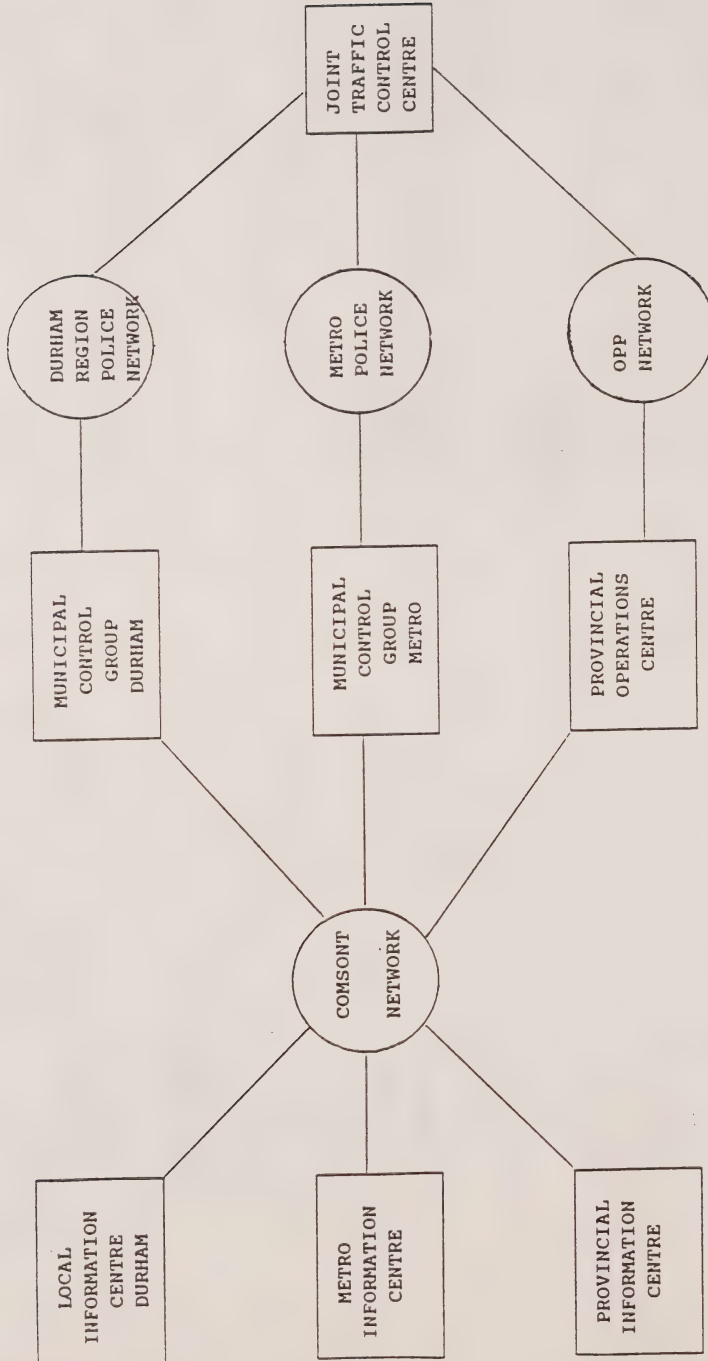
MUNICIPAL CONTROL GROUP DURHAM

LOCAL INFORMATION CENTRE

ONTARIO GOVERNMENT AND ONTARIO HYDRO PRIVATE TELEPHONE NETWORKS



RADIO LINKS



PROVINCIAL NOTIFICATION PROCEDURES AND LISTS

1. Appended in the following annexes:

Annex A - Notification Procedure

Annex B - Notification List #1 - Initiation of Notification

Annex C - Notification List #2 - Operations Group

Annex D - Notification List #3 - Technical Group

Annex E - Notification List #4 - External Notification

2. Other Provincial notification lists will be found in other documents as shown:

Notification List #5 -	In Pickering Joint Traffic Control Plan
Notification Lists #6-9 - (Information Organization)	In Provincial Information Plan/Procedures
Notification List #10 - (Ingestion Monitoring Organization)	In Ingestion Monitoring Organization Procedural Manual

NOTIFICATION PROCEDURE

1.0 Initiation of Notification

The Coordinator, Emergency Planning Ontario, and his staff shall undertake the required authentication before initiating the fan-out notification procedure.

2.0 Fan-out Procedure

The recipient of a notification message shall use the appropriate notification list to continue the notification as follows:

- (a) Call the person whose name appears first in the box or boxes directly connected to your box by directional arrows. (Do not call other persons named in your own box).
- (b) When you have got the named person on the line (do not leave a message!), identify yourself, deliver the message received by you, and confirm that the recipient can:
 - (1) comply with the message, and
 - (2) continue the fan-out notification.
- (c) If the named individual cannot be contacted, or he/she cannot fulfill both the above-mentioned requirements, call the second person named in the box, and repeat the process. If necessary, go down to the third name in the box.
- (d) If none of the persons in a box is available or able to comply, then proceed to the next box(es) so as to ensure the continued propagation of the fan-out.
- (e) In case of (d) above, or if any other unforeseen complication arises, inform the person shown on the top of your notification list as the Facilitator.

3.0 Action on Being Notified

3.1 The notification message could be one of the two types:

- (a) Activating the plan and the emergency organization; or

- (b) Placing the emergency organization on stand-by.

3.2 Activation

In this case the action required is:

- (a) Individuals should immediately report to the prescribed place of assembly of their organization.
- (b) If any plan calls for certain actions to be automatically taken upon activation of the plan, then the individuals responsible shall commence implementation of these actions.

3.3 Stand-by

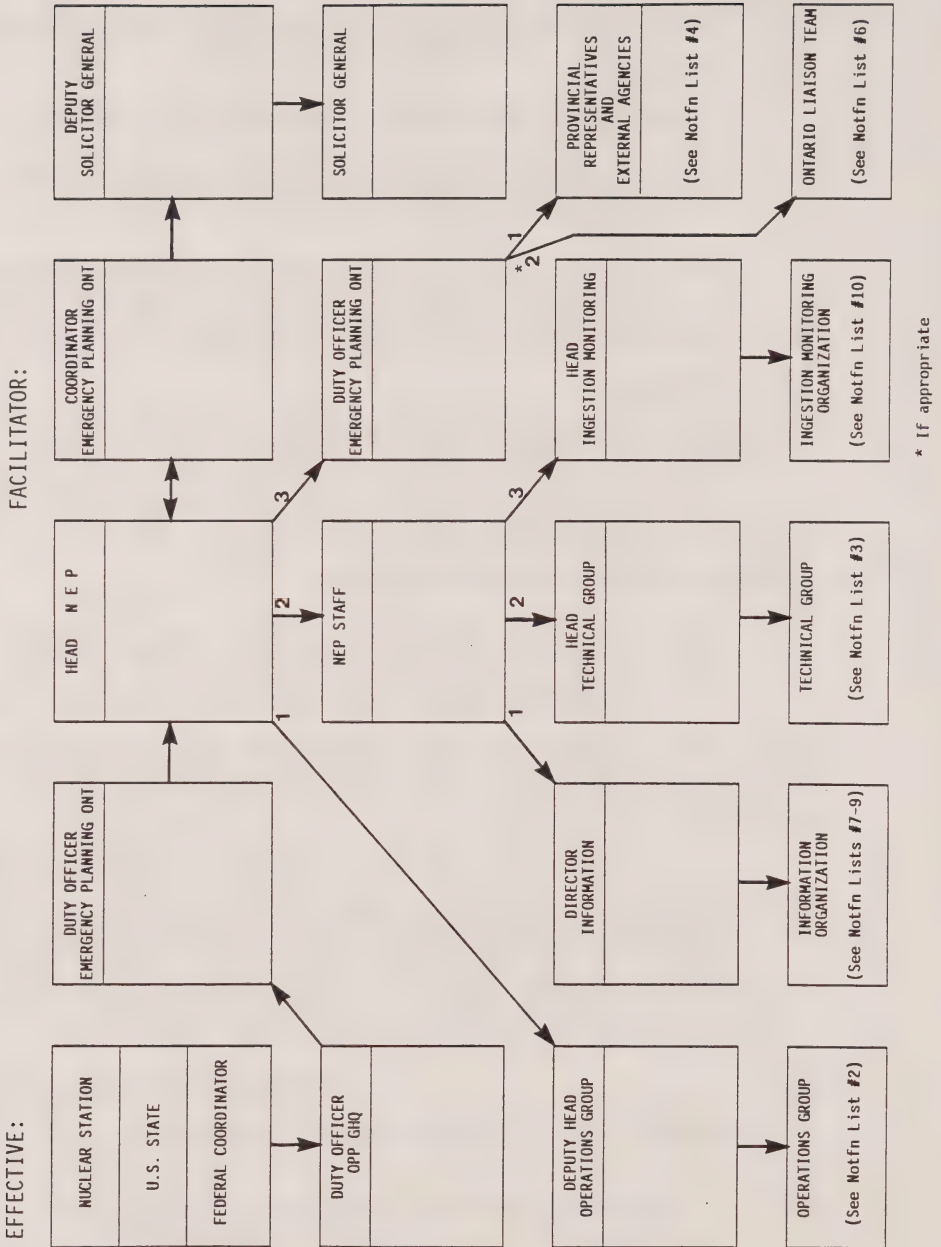
All individuals notified shall remain available at their offices or homes, as appropriate. If they leave either, they shall inform the person preceding them in the notification chain of the new telephone number at which they can be contacted.

4.0 Responsibility of the Facilitator

- 4.1 The Facilitator for a notification list is responsible for the completion of the fan-out for that list. If any report is received of a breakdown in the fan-out, the Facilitator shall take appropriate action, e.g.:
 - (a) If a box has been missed out (2.0 (d) above), keep trying to contact one of the persons in the box.
 - (b) If the chain of calls is broken, take over and complete notifications to the end of that chain.
- 4.2 Whenever notified of a problem during a notification fan-out, the Facilitator shall, after dealing with it, report it and the action taken to the Deputy Head of the Operations Group (or an Operations Staff Officer).

PROVINCIAL NUCLEAR EMERGENCY PLAN

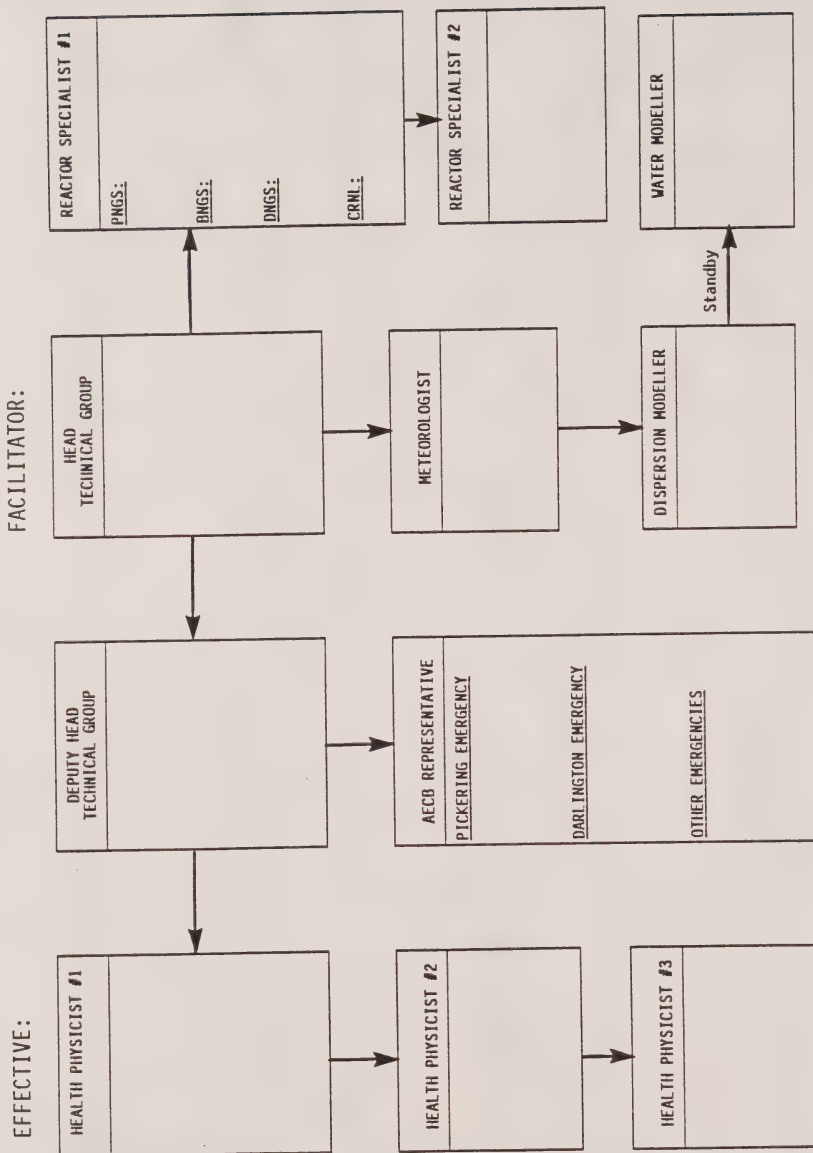
PROVINCIAL NOTIFICATION LIST #1 - INITIATION OF NOTIFICATION



PROVINCIAL NUCLEAR EMERGENCY PLAN
PROVINCIAL NOTIFICATION LIST #3 - TECHNICAL GROUP

- 60 -

ANNEX D
to APPENDIX 7



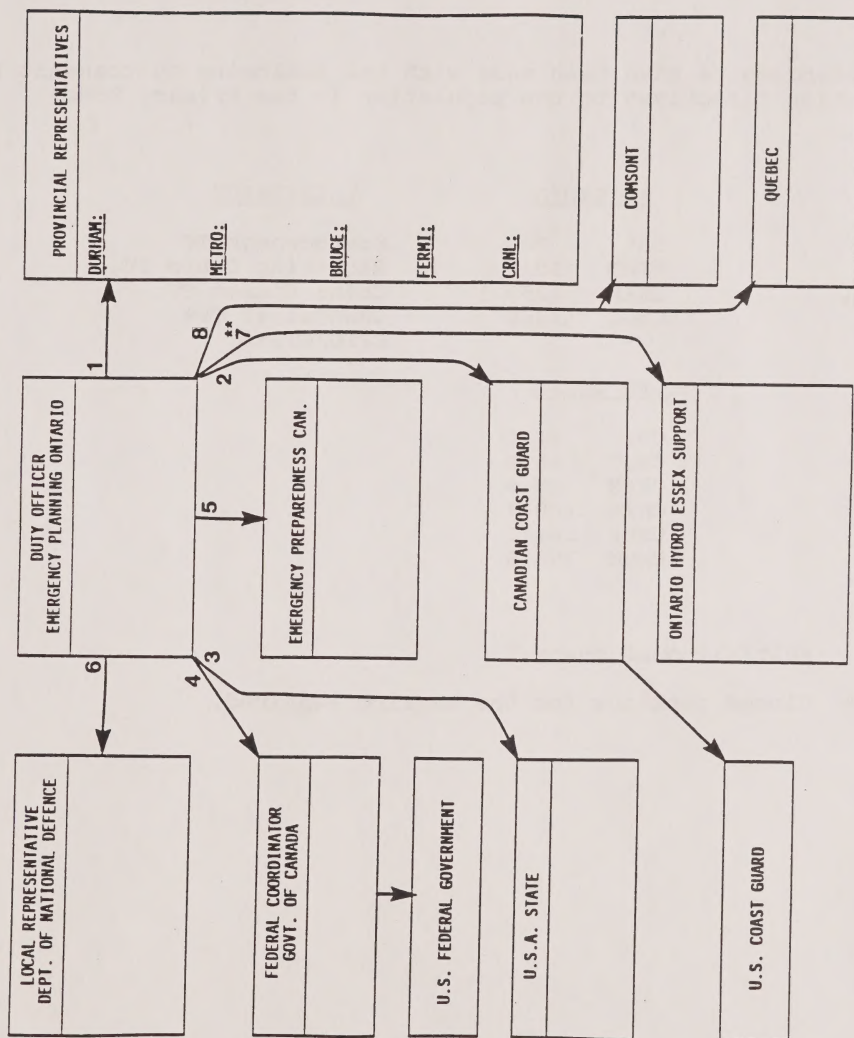
PROVINCIAL NUCLEAR EMERGENCY PLAN

PROVINCIAL NOTIFICATION LIST #4

PROVINCIAL REPRESENTATIVES & EXTERNAL AGENCIES

EFFECTIVE:

FACILITATOR:



* Require long distance dialling (1-416)
** Fermi Emergency Only

APPENDIX 8
(Ref: Section 7.2)

DESIGNATED MEDIA

Arrangements have been made with the following to transmit Public Action Directives to the population in the Primary Zone:

AM RADIO

CBL	740
CFRB	1010
CKAR	1350
CHOO	1390

TELEVISION

Scarborough TV
Pickering Cable TV
China Vision TV
Channel 47 TV*
CFTO/CTV**

FM RADIO

CBL	94.1
CKQT	94.9
CKFM	99.9
CHIN	100.7
CFMX	103.1
CHUM	104.5

* Multi-lingual channel.

** Closed captions for the hearing impaired.

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